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CANADIAN PATENT

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WINDOW STRUCTURE

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This invention relates to a window structure.

In spite of the pleasing appearance of colonial windows these have become less popular because of the difficulty of cleaning the windows, particularly where they are associated with storm windows. The dividing members of conventional colonial windows define individual panes of glass, the corners and side edges of which are particularly difficult to clean. Colonial windows are unsatisfactory for use in conjunction with permanent storm windows. Furthermore, the individual pane structure of storm windows is inherently weak with the consequence that over a period of time, the entire structure may become loose. The object of this invention is to provide a window in which the appearance of a colonial window or the like is obtained and yet which is easy to clean. A further object of this invention is to provide a structure in which a permanent storm window can be provided. A further object of this invention is to provide a structure in which the intermediate dividing members strengthen instead of weakening the structure.

In accordance with this invention the foregoing objects are achieved by providing a window comprising a pair of spaced panes, a plurality of intersecting intermediate dividing members sandwiched between said panes, a peripheral frame member encircling said panes and sealing means between said peripheral frame member and said panes adapted to provide an airtight enclosure. In the drawings which illustrate the preferred embodiment of this invention;

Figure 1 is a plan view of a window in accordance with this invention;

Figure 2 is a sectional view on the line 2-2 of Figure 1; and

Figure 3 is a detailed perspective view of part of Figure 1 showing the intersecting dividing members.

In the drawings there is illustrated a pair of spaced window panes 10 and 11 between which are sandwiched vertical dividing

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members 12 and horizontal dividing members 13. As best illustrated in Figure 3, the vertical and horizontal dividing members are rectangular tubes. Half lap joints are provided where they intersect at 14, so that the vertical and horizontal dividing members will be coplanar and each will be in contact with both pane 10 and pane 11.

At the edges of panes 10 and 11 there is provided an inner peripheral frame 15. The ends such as 16 of the horizontal and vertical dividing members will be in abutment with the sides of inner peripheral frame member 15. As shown in Figure 2, frame member 15 is in the form of a rectangular tube. The frame is additionally composed of an outer frame channel member 17 which overlaps the outer edges of panes 10 and 11. Channel 17 can conveniently be in the form of separate sections connected by corner strips 17a. An airtight seal is given by beads 18 between the panes 10 and 11 and channel member 17, together with layers of rubber cement which include a layer 19 between channel 17 and the outer surface 20 of the edge of panes 10 and 11, a layer 21 between inner frame member 15 and the inner surface 22 of the edges of panes 10 and 11 and a connecting layer 23 extending between panes 10 and 11. Bead 18 is made, for example, of butyl rubber and a compatible rubber cement is used so that the bead combines with the rubber cement to give an integral and effective seal. It is important that an adequate seal be provided to prevent moisture condensing between the panes. It is advantageous to include a dessicant powder indicated at 24 within the rectangular tubular-dividing members 12 and 13 to absorb any moisture in the air initially between the panes and to prolong the life of the window if the seal should become damaged.

It will be appreciated that the foregoing structure is easy to clean as the outer surface of each pane is an uninterrupted smooth surface. The interior surface between the panes is sealed against both dust and moisture and therefore never requires cleaning. It will be noted also that the coplanar structure of the dividing members results

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in their reinforcing the window against pressure from either direction with the consequence that a stronger and not a weaker structure is provided.

It will further be appreciated that although the preferred embodiment of this invention has been explained in relation to a colonial type window, other appearances can be achieved, for example, the intersecting dividing members could be sloped to provide diamond shaped panes.

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The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A window comprising a pair of spaced panes, a plurality of intersecting intermediate dividing members spaced and arranged to give said window the appearance of a plurality of individual panes, said intermediate dividing members being sandwiched between said panes, a peripheral frame member encircling said panes and sealing means between said peripheral frame member and said panes adapted to provide an airtight enclosure.
2. A window as in Claim 1 in which the intermediate dividing members are in contact with each of said panes and are coplanar.
3. A window as in Claim 1 in which the frame member includes a peripheral inner frame member and an outer frame channel member.
4. A window as in Claim 3 in which the sealing means includes a synthetic rubber bead between each pane and said channel member and a layer of rubber cement compatible with said bead and extending around the periphery of the window between the outer surfaces of the panes and the channel, between the peripheral inner frame and the panes and between the panes to give an integral seal.
5. A window as in Claims 1, 2 or 4 in which the intermediate dividing members extend vertically and horizontally to give a colonial window effect.
6. A window as in Claims 1, 2 or 4 in which the dividing members are tubular and contain a dessicant.

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WINDOW STRUCTURE

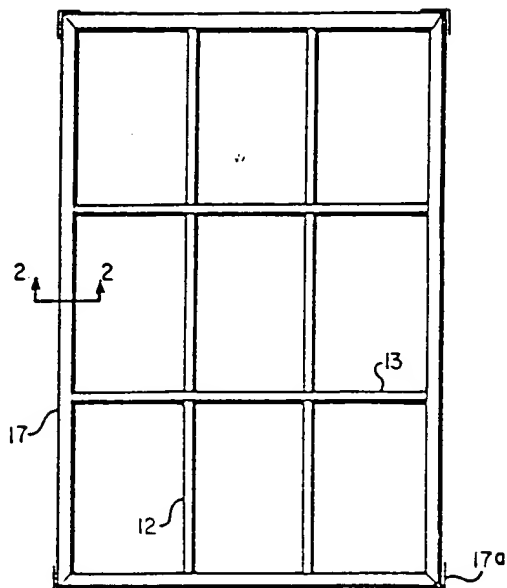


Fig. 1.

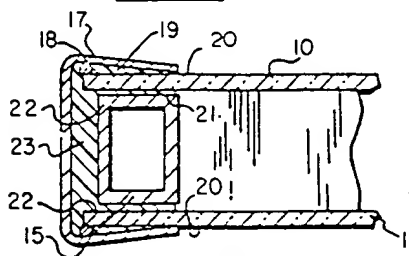


Fig. 2.

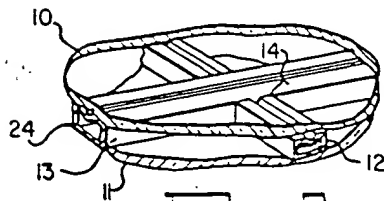


Fig. 3.

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